
**PART S
DEMOLITION**

WAC 296-155-775 Preparatory operations.

- (1) Prior to permitting employees to start demolition operations, an engineering survey shall be made, by a competent person, of the structure to determine structural integrity and the possibility of unplanned collapse of any portion of the structure. Any adjacent structure where employees may be exposed shall also be similarly checked. The employer shall have in writing, evidence that such a survey has been performed.
- (2) A copy of the survey report and of the plans and/or methods of operations shall be maintained at the job site for the duration of the demolition operation.
- (3) Any device or equipment such as scaffolds, ladders, derricks, hoists, etc., used in connection with demolition work shall be constructed, installed, inspected, maintained and operated in accordance with the regulations governing the construction, installation, inspection, maintenance and operation of such device or equipment as specified in other parts of this chapter.
- (4) Federal and state codes, safety standards, rules, regulations, and ordinances governing any and all phases of demolition work shall be observed at all times.
- (5) Demolition of all buildings and structures shall be conducted under competent supervision, and safe working conditions shall be afforded the employees.
- (6) When employees are required to work within a structure to be demolished which has been damaged by fire, flood, explosion, or other cause, the walls or floor shall be shored or braced.
- (7) All electric, gas, water, steam, sewer, and other service lines shall be shut off, capped, or otherwise controlled, outside the building line before demolition work is started. In each case, any utility company which is involved shall be notified in advance.
- (8) If it is necessary to maintain any power, water or other utilities during demolition, such lines shall be temporarily relocated, as necessary, and protected.
- (9) It shall be determined whether asbestos, hazardous materials, hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances are present at the work site. When the presence of any such substance is apparent or suspected, testing and removal or purging shall be performed and the hazard eliminated before demolition is started. Removal of such substances shall be in accordance with the requirements of chapters 296-62 and 296-65 WAC.
- (10) Where a hazard exists from fragmentation of glass, such hazards shall be removed.
- (11) Where a hazard exists to employees falling through wall openings, the opening shall be protected to a height of between thirty-six and forty-two inches.
- (12) When debris is dropped without the use of chutes, the area onto which the material is dropped shall be completely enclosed with barricades not less than forty-two inches high and not less than twenty feet back from the projected edge of the opening above. Signs, warning of the hazard of falling materials, shall be posted at each level. Removal shall not be permitted in this lower area until debris handling ceases above.
- (13) All floor openings, not used as material drops, shall be covered over with material substantial enough to support the weight of any load which may be imposed. Such material shall be properly secured to prevent its accidental movement.

WAC 296-155-775 (Cont.)

- (14) Except for the cutting of holes in floors for chutes, holes through which to drop materials, preparation of storage space, and similar necessary preparatory work, the demolition of exterior walls and floor construction shall begin at the top of the structure and proceed downward. Each story of exterior wall and floor construction shall be removed and dropped into the storage space before commencing the removal of exterior walls and floors in the story next below.
- (15) Workers shall not be permitted to carry on a demolition operation which will expose persons working on a lower level to danger.
- (16) Employee entrances to multistory structures being demolished shall be completely protected by sidewalk sheds or canopies, or both, providing protection from the face of the building for a minimum of eight feet. All such canopies shall be at least two feet wider than the building entrances or openings (one foot wider on each side thereof), and shall be capable of sustaining a load of one hundred fifty pounds per square foot.
- (17) Protruding nails in boards, planks and timber shall be withdrawn, driven in or bent over as soon as the same is removed from the structure being demolished.
- (18) Any material to be removed which will cause dust to be formed, shall be sprinkled with water to lay the dust incidental to its removal.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-775, filed 7/20/94, effective 9/20/94; 87-24-051 (Order 87-24), § 296-155-775, filed 11/30/87. Statutory Authority: RCW 49.17.050(2) and 49.17.040. 87-10-008 (Order 87-06), § 296-155-775, filed 4/27/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-775, filed 1/21/86; Order 74-26, § 296-155-775, filed 5/7/74, effective 6/6/74.]

WAC 296-155-780 Stairs, passageways, and ladders.

- (1) Only those stairways, passageways, and ladders, designated as means of access to the structure of building, shall be used. Other access ways shall be entirely closed off at all times.
- (2) All stairs, passageways, ladders and incidental equipment thereto, which are covered by this section, shall be periodically inspected and maintained in a clean safe condition.
- (3) All ladders shall be secured in position.
- (4) In a multistory building, when a stairwell is being used, it shall be properly illuminated by either natural or artificial means, and completely and substantially covered over at a point not less than two floors below the floor on which work is being performed. Access to the floor where the work is in progress shall be through a properly lighted, protected, and separate passageway.

[Order 74-26, § 296-155-780, filed 5/7/74, effective 6/6/74.]

WAC 296-155-785 Chutes.

- (1) No material shall be dropped to any point lying outside the exterior walls of the structure unless the area is effectively protected.
- (2) All materials chutes, or sections thereof, at an angle of more than 45° from the horizontal, shall be entirely enclosed, except for openings equipped with closures at or about floor level for the insertion of materials. The openings shall not exceed 48 inches in height measured along the wall of the chute. At all stories below the top floor, such openings shall be kept closed when not in use.
- (3) A substantial gate shall be installed in each chute at or near the discharge end. A competent employee shall be assigned to control the operation of the gate, and the backing and loading of trucks.

WAC 296-155-785 (Cont.)

- (4) When operations are not in progress, the area surrounding the discharge end of a chute shall be securely closed off.
- (5) Any chute opening, into which workers dump debris, shall be protected by a substantial guardrail between 36 and 42 inches above the floor or other surface on which the employees stand to dump the material. Any space between the chute and the edge of openings in the floors through which it passes shall be solidly covered over.
- (6) Where the material is dumped from mechanical equipment or wheelbarrows, a securely attached toeboard or bumper, not less than 4 inches thick and 6 inches high, shall be provided at each chute opening.
- (7) Chutes shall be designed and constructed of such strength as to eliminate failure due to impact of materials or debris loaded therein.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-785, filed 7/20/94, effective 9/20/94; Order 74-26, § 296-155-785, filed 5/7/74, effective 6/6/74.]

WAC 296-155-790 Removal of materials through floor openings. Any openings cut in a floor for the disposal of materials shall be no larger in size than 25 percent of the aggregate of the total floor area, unless the lateral supports of the removed flooring remain in place. Floors weakened or otherwise made unsafe by demolition operations shall be shored to carry safely the intended imposed load from demolition operations.

[Order 74-26, § 296-155-790, filed 5/7/74, effective 6/6/74.]

WAC 296-155-795 Removal of walls, masonry sections, and chimneys.

- (1) Masonry walls, or other sections of masonry, shall not be permitted to fall upon the floors of the building in such masses as to exceed the safe carrying capacities of the floors.
- (2) No wall section, which is more than one story in height, shall be permitted to stand alone without lateral bracing, unless such wall was originally designed and constructed to stand without such lateral support, and is in a condition safe enough to be self-supporting. All walls shall be left in a stable condition at the end of each shift.
- (3) Employees shall not be permitted to work on the top of a wall when weather conditions constitute a hazard.
- (4) Structural or load-supporting members on any floor shall not be cut or removed until all stories above such a floor have been demolished and removed. This provision shall not prohibit the cutting of floor beams for the disposal of materials or for the installation of equipment, provided that the requirements of WAC 296-155-790 and 296-155-800 are met.
- (5) Floor openings within 10 feet of any wall being demolished shall be planked solid, except when employees are kept out of the area below.
- (6) In buildings of "skeleton-steel" construction, the steel framing may be left in place during the demolition of masonry. Where this is done, all steel beams, girders, and similar structural supports shall be cleared of all loose material as the masonry demolition progresses downward.
- (7) Walkways or ladders shall be provided to enable employees to safely reach or leave any scaffold or wall.
- (8) Walls, which serve as retaining walls to support earth or adjoining structures, shall not be demolished until such earth has been properly braced or adjoining structures have been properly underpinned.
- (9) Walls, which are to serve as retaining walls against which debris will be piled, shall not be so used unless capable of safely supporting the imposed load.

[Order 74-26, § 296-155-795, filed 5/7/74, effective 6/6/74.]

WAC 296-155-800 Manual removal of floors.

- (1) Openings cut in a floor shall extend the full span of the arch between supports.
- (2) Before demolishing any floor arch, debris and other material shall be removed from such arch and other adjacent floor area. Planks not less than 2 inches by 10 inches in cross section, full size undressed, shall be provided for, and shall be used by employees to stand on while breaking down floor arches between beams. Such planks shall be so located as to provide a safe support for the workers should the arch between the beams collapse. The open space between planks shall not exceed 16 inches.
- (3) Safe walkways, not less than 18 inches wide, formed of planks not less than 2 inches thick if wood, or of equivalent strength if metal, shall be provided and used by workers when necessary to enable them to reach any point without walking upon exposed beams.
- (4) Stringers of ample strength shall be installed to support the flooring planks, and the ends of such stringers shall be supported by floor beams or girders, and not by floor arches alone.
- (5) Planks shall be laid together over solid bearings with the ends overlapping at least 1 foot.
- (6) When floor arches are being removed, employees shall not be allowed in the area directly underneath, and such an area shall be barricaded to prevent access to it.
- (7) Demolition of floor arches shall not be started until they, and the surrounding floor area for a distance of 20 feet, have been cleared of debris and any other unnecessary materials.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-800, filed 7/20/94, effective 9/20/94; Order 74-26, § 296-155-800, filed 5/7/74, effective 6/6/74.]

WAC 296-155-805 Removal of walls, floors, and material with equipment.

- (1) Mechanical equipment shall not be used on floors or working surfaces unless such floors or surfaces are of sufficient strength to support the imposed load.
- (2) Floor openings shall have curbs or stop-logs to prevent equipment from running over the edge.
- (3) Mechanical equipment used shall meet the requirements specified in parts L and M of this chapter.

[Order 74-26, § 296-155-805, filed 5/7/74, effective 6/6/74.]

WAC 296-155-810 Catch platforms.

- (1) During the demolition of the exterior walls of a structure originally more than seventy feet high, catch platforms shall be erected along the exterior faces of such walls where necessary to prevent injury to persons working below.
- (2) Such catch platforms shall be constructed and maintained not more than three stories below the story from which the exterior walls are being removed, until the demolition has progressed to within three stories of the ground level.
- (3) Catch platforms shall not be less than five feet in width measured in a horizontal distance from the face of the structure and constructed of outriggers and planks. Planks shall be laid tight together and without openings between the planks and the wall.

Note: Catch platforms may be constructed of other approved materials of equal strength and security against falling material.

WAC 296-155-810 (Cont.)

- (4) Catch platforms shall be capable of sustaining a uniform live load of not less than one hundred and twenty-five pounds per square foot.

[Order 74-26, § 296-155-810, filed 5/7/74, effective 6/6/74.]

WAC 296-155-815 Storage.

- (1) The storage of waste material and debris on any floor shall not exceed the allowable floor loads.
- (2) In buildings having wooden floor construction, the flooring boards may be removed from not more than one floor above grade to provide storage space for debris, provided falling material is not permitted to endanger the stability of the structure.
- (3) When wood floor beams serve to brace interior walls or free-standing exterior walls, such beams shall be left in place until other equivalent support can be installed to replace them.
- (4) Floor arches, to an elevation of not more than 25 feet above grade, may be removed to provide storage area for debris: Provided, That such removal does not endanger the stability of the structure.
- (5) Storage space into which material is dumped shall be blocked off, except for openings necessary for the removal of material. Such openings shall be kept closed at all times when material is not being removed.

[Order 74-26, § 296-155-815, filed 5/7/74, effective 6/6/74.]

WAC 296-155-820 Removal of steel construction.

- (1) When floor arches have been removed, planking in accordance with WAC 296-155-800(2) shall be provided for the workers engaged in razing the steel framing.
- (2) Cranes, derricks, and other hoisting equipment used shall meet the requirements specified in part L of this chapter.
- (3) Steel construction shall be dismantled column length by column length, and tier by tier (columns may be in two-story lengths).
- (4) Any structural member being dismembered shall not be overstressed.

[Order 74-26, § 296-155-820, filed 5/7/74, effective 6/6/74.]

WAC 296-155-825 Mechanical demolition.

- (1) No workers shall be permitted in any area, which can be adversely affected by demolition operations, when balling or clamming is being performed. Only those workers necessary for the performance of the operations shall be permitted in this area at any other time.
- (2) The weight of the demolition ball shall not exceed 50 percent of the crane's rated load, based on the length of the boom and the maximum angle of operation at which the demolition ball will be used, or it shall not exceed 25 percent of the nominal breaking strength of the line by which it is suspended, whichever results in a lesser value.
- (3) The crane boom and loadline shall be as short as possible.
- (4) The ball shall be attached to the loadline with a swivel-type connection to prevent twisting of the loadline, and shall be attached by positive means in such manner that the weight cannot become accidentally disconnected.

WAC 296-155-825 (Cont.)

- (5) When pulling over walls or portions thereof, all steel members affected shall have been previously cut free.
- (6) All roof cornices or other such ornamental stonework shall be removed prior to pulling walls over.
- (7) During demolition, continuing inspections by a competent person shall be made as the work progresses to detect hazards resulting from weakened or deteriorated floors, or walls, or loosened material. No employee shall be permitted to work where such hazards exist until they are corrected by shoring, bracing, or other effective means.

[Order 74-26, § 296-155-825, filed 5/7/74, effective 6/6/74.]

WAC 296-155-830 Selective demolition by explosives. Selective demolition by explosives shall comply with chapter 296-52 WAC.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-830, filed 1/21/86; Order 74-26, § 296-155-830, filed 5/7/74, effective 6/6/74.]